

ABSTRACT

A multiple access, spread-spectrum communication system processes a plurality of information signals received by a radio carrier station over telecommunication lines for simultaneous transmission over a radio frequency channel as a code-division-multiplexed signal to a group of subscriber units. The radio carrier station receives a call request signal that corresponds to a telecommunication line information signal, and a user identification signal that identifies a user to receive the call. The radio carrier station includes a plurality of CDMA modems, one of which provides a global pilot code signal. The modems provide message code signals synchronized to the global pilot signal. Each modem combines an information signal with a message code signal to provide a code division multiplexed signal. The RCS includes a system channel controller is coupled to receive a remote call. A radio frequency transmitter is connected to all of the modems to combine the code division multiplexed processed signals with the global pilot code signal to generate a code division multiplexed signal. The transmitter also modulates a carrier signal with the code division multiplexed signal and transmits the modulated carrier signal through a radio frequency communication channel to the subscriber units. Each subscriber unit includes a CDMA modem which is also synchronized to the global pilot signal. The CDMA modem despreads the code division multiplexed signal and provides a despread information signal to the user. The system includes a closed loop power control system for maintaining a minimum system transmit power level for the radio carrier station and the subscriber units, and system capacity management for maintaining a maximum number of active subscriber units for improved system performance.